UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
CORRIELUS, JEAN M

ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2004*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-68* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5,8-13,16,17,20-22,27,32,33,36,37,40-44,48,50-58,62,63,67 and 68* is/are rejected.

7)☒ Claim(s) *2,3,6,7,14,15,18,19,23-26,28-31,34,35,38,39,45-47,49,59-61 and 64-66* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to the amendment filed September 17, 2004, in which

claims 1-68 are presented for further examination.

Response to Arguments

2.   Applicant's arguments with respect to claims 1-68 have been considered but are moot in

view of the new ground(s) of rejection.

Specification

3.   The following guidelines illustrate the preferred layout for the specification of a utility

application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

4.   As provided in 37 CFR 1.77(b), the specification of a utility application should include

the following sections in order. Each of the lettered items should appear in upper case, without

underlining or bold type, as a section heading. If no text follows the section heading, the phrase

"Not Applicable" should follow the section heading:

> (a) TITLE OF THE INVENTION.
> (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
> (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
>   DEVELOPMENT.
> (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A
>   COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program
>   listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables
>   having more than 50 pages of text are permitted to be submitted on compact
>   discs.) or
>   REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).
>   "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
> (e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

5.   The specification is object because the applicant does specify which portion of the specification is the background and summary of the invention. Applicant is advised to follow the guideline illustrated above.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7.   Claims 1-68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(A).   Claims 1, 12 and 44 also recite the claimed *"receiving a database statement from a client; determining if the database statement is optimally shareable, sub-optimally shareable, or non-shareable; searching memory for a similar database statement"*. It is important to note that present invention is directed to a method or system for sharing of execution plan for similar database statements. More specifically, two statements can be qualified as *sub-optimally shareable* statements if they only differ by a literal value and have very different execution plan

(see Applicant's specification page 11, lines 1-2). Similarly, two statements can be qualified as *optimally shareable* if they are likely to have the same or very similar execution plans, without significant sacrifice to perform when sharing cursors (see Applicant's specification page 11, lines 3-5). Whereas, a pair of similar statements is considered *non-shareable* if sharing a cursor compiled for one of the statement would produce incorrect result if shared by the other, so a such a Non-shareable statement do not share a cursor unless a complete syntax of the statements is textually identical (See Applicant's specification page 14, lines 6-19). Using the above detailed information, it is impossible to one having ordinary skill in the art to determine whether a database statement is *optimally shareable, sub-optimally shareable, or non-shareable* using the receiving database statement from the client when the above mentioned set forth, at least a pair of database statements is required in order to perform the execution plan for similar database statements. As detail in the specification (pages 15-17), in determining, the system and method for execution plan sharing, one must, first analyzing whether the SQL text of the two similar statement is non-shareable; second determining whether the similar SQL statements are sub-optimally shareable. If the statements are sub optimally shareable, then the cursor-sharing parameter is set to FORCE. If the statements are sub optimally shareable but cursor sharing is not set to FORCE, then a new cursor will by compiled for that SQL text. As a result the shared execution plan implements reuse by automatically replacing every SQL text literal with a bind variable

(B).   Claims 1, 12 and 44 recites "searching *memory* for a similar database statement". It is unclear as to whether the applicant is referring to client memory or else.

It is also unclear as to why one having ordinary skill in the art would have to search memory for similar database statement when the step of ***determining if the database statement is optimally shareable, sub-optimally shareable, or non-shareable*** is already use to perform the execution plan for similar database statements.

(C.   Claims 1, 12 and 44 recite "sharing a data structure in which a compiled cursor is stored". This limitation of the preamble is not related to the embodiments of the present invention. The present invention, however, is directed to a system and method for sharing of execution plans for similar database statements. Even such limitation in the preamble the invention as claimed, but it does not tie to what set forth in the body of the claims. The body of the claims calls for a use for controlling data structure sharing. For the purpose of examination, the examiner has considered "sharing a data structure in which a compiled cursor is stored" to be -- sharing of execution plans for similar database statements--.

(D).   Claims 1, 12 and 44 recite "reusing the data structure compiled for said similar database statement to execute said database statement when a system parameter is configured to control data structure sharing". It is unclear to one having ordinary kill in the art to reuse the data structure, when the specification (page 6) makes it clear the system and method for sharing of execution plans for similar database statements overcomes the conventional system has indicated in the background of the invention by reusing the execution plan of an existing cursor in a situation where a client issues a SQL statement similar to another SQL statement previously (see specification page 6, paragraph 3).

(E).   The analysis of claims 1, 12 and 44 above is also applied to claims 2-11, 13-43 and 45-

57.

(F).   Claim 22 recites "In a client/server computer system having a server shared memory pool

for caching client SQL requests, a method for execution plan sharing comprising". This claimed

language is unclear. For the purpose of examination the examiner has considered the recited "In

a client/server computer system having a server shared memory pool for caching client SQL

requests, a method for execution plan sharing comprising" as -- In a client/server computer

system having a server shared memory pool for caching client SQL requests, a method for

sharing execution plans for similar database statements comprising--.

(G).   Claim 22 recites the claimed *"receiving a first SQL text from a client; determining if*

the first SQL text is optimally shareable, sub-optimally shareable, or non-shareable". It is

important to note that present invention is directed to a method or system for sharing of

execution plan for similar database statements. More specifically, two statements can be

qualified as _**sub-optimally shareable**_ statements if they only differ by a literal value and have

very different execution plan (see Applicant's specification page 11, lines 1-2). Similarly, two

statements can be qualified as _**optimally shareable**_ if they are likely to have the same or very

similar execution plans, without significant sacrifice to perform when sharing cursors (see

Applicant's specification page 11, lines 3-5). Whereas, a pair of similar statements is considered

**non-shareable** if sharing a cursor compiled for one of the statement would produce incorrect

result if shared by the other, so a such a Non-shareable statement do not share a cursor unless a complete syntax of the statements is textually identical (See Applicant's specification page 14, lines 6-19). Using the above detailed information, it is impossible to one having ordinary skill in the art to determine whether a first SQL text *is optimally shareable, sub-optimally shareable, or non-shareable* using the receiving database statement from the client when the above mentioned set forth, at least a pair of database statements is required in order to perform the execution plan for similar database statements. As detail in the specification (pages 15-17), in determining, the system and method for execution plan sharing, one must, first analyzing whether the SQL text of the two similar statement is non-shareable; second determining whether the similar SQL statements are sub-optimally shareable. If the statements are sub optimally shareable, then the cursor-sharing parameter is set to FORCE. If the statements are sub optimally shareable but cursor sharing is not set to FORCE, then a new cursor will by compiled for that SQL text. As a result the shared execution plan implements reuse by automatically replacing every SQL text literal with a bind variable

(H).   Claim 22 recites "searching *memory* pool for a second SQL text similar to the first SQL text". It is unclear as to whether the applicant is referring to client memory or else. It is also unclear as to why one having ordinary skill in the art would have to search memory for similar SQL text, when the step of *determining if the first SQL text is optimally shareable, sub-optimally shareable, or non-shareable* is already use to perform the execution plan for similar database statements.

(I).   Claims 27 and 32 recite "a computer readable medium having stored thereon one or more

sequences of instructions for controlling execution of one or more processors, the one or more

sequences of instructions comprising instructions for". This recited language of the preamble

does not perform what the body of the claims set forth. The body of the claims calls for the use

of controlling cursor sharing.

(J).   Claims 27 and 32 recite the claimed *"receiving a SQL text from a client; determining if*

the SQL text is optimally shareable, sub-optimally shareable, or non-shareable". It is

important to note that present invention is directed to a method or system for sharing of

execution plan for similar database statements. More specifically, two statements can be

qualified as *__sub-optimally shareable__* statements if they only differ by a literal value and have

very different execution plan (see Applicant's specification page 11, lines 1-2). Similarly, two

statements can be qualified as *__optimally shareable__* if they are likely to have the same or very

similar execution plans, without significant sacrifice to perform when sharing cursors (see

Applicant's specification page 11, lines 3-5). Whereas, a pair of similar statements is considered

__non-shareable__ if sharing a cursor compiled for one of the statement would produce incorrect

result if shared by the other, so a such a Non-shareable statement do not share a cursor unless a

complete syntax of the statements is textually identical (See Applicant's specification page 14,

lines 6-19). Using the above detailed information, it is impossible to one having ordinary skill in

the art to determine whether a SQL text *is __optimally shareable, sub-optimally shareable, or__*

__non-shareable__ using the receiving database statement from the client when the above mentioned

set forth, at least a pair of database statements is required in order to perform the execution plan

for similar database statements. As detail in the specification (pages 15-17), in determining, the

system and method for execution plan sharing, one must, first analyzing whether the SQL text of

the two similar statement is non-shareable; second determining whether the similar SQL

statements are sub-optimally shareable. If the statements are sub optimally shareable, then the

cursor-sharing parameter is set to FORCE. If the statements are sub optimally shareable but

cursor sharing is not set to FORCE, then a new cursor will by compiled for that SQL text. As a

result the shared execution plan implements reuse by automatically replacing every SQL text

literal with a bind variable.

(K).   Claims 27 and 32 recite "searching *memory* for similar SQL text". It is unclear as to

whether the applicant is referring to client memory or else. It is also unclear as to why one

having ordinary skill in the art would have to search memory for similar SQL text, when the step

of *determining if the SQL text is optimally shareable, sub-optimally shareable, or non-*

shareable is already use to perform the execution plan for similar database statements.

(L).   Claims 27 and 32 recites "reusing a cursor compiled for said similar SQL text to execute

said SQL text if said matching SQL text in found in said memory". It is unclear to one having

ordinary kill in the art to reusing a cursor compiled, when the specification (page 6) makes it

clear the system and method for sharing of execution plans for similar database statements

overcomes the conventional system has indicated in the background of the invention by reusing

the execution plan of an existing cursor in a situation where a client issues a SQL statement

similar to another SQL statement previously (see specification page 6, paragraph 3).

(M).   Claims 58 and 62 recite "a system for cursor sharing". Such a language of the preamble

does not provide enough information (understand) to enable one having ordinary skill in the art

to carry the steps of controlling cursor sharing set forth in the claims. Moreover, such a limitation

of the preamble does not link to the body of the claim. The body of the claim is directed to the

use of controlling cursor sharing, whereas, the preamble is directed to cursor sharing.

(N).   Claims 58 and 62 recite the claimed *"means for accepting a SQL text from a client;*

means for determining if the SQL text is optimally shareable, sub-optimally shareable, or non-

shareable". It is important to note that present invention is directed to a method or system for

sharing of execution plan for similar database statements. More specifically, two statements can

be qualified as ___sub-optimally shareable___ statements if they only differ by a literal value and have

very different execution plan (see Applicant's specification page 11, lines 1-2). Similarly, two

statements can be qualified as ___optimally shareable___ if they are likely to have the same or very

similar execution plans, without significant sacrifice to perform when sharing cursors (see

Applicant's specification page 11, lines 3-5). Whereas, a pair of similar statements is considered

___non-shareable___ if sharing a cursor compiled for one of the statement would produce incorrect

result if shared by the other, so a such a Non-shareable statement do not share a cursor unless a

complete syntax of the statements is textually identical (See Applicant's specification page 14,

lines 6-19). Using the above detailed information, it is impossible to one having ordinary skill in

the art to determine whether a SQL text *is optimally shareable, sub-optimally shareable, or*

non-shareable using the receiving database statement from the client when the above mentioned

set forth, at least a pair of database statements is required in order to perform the execution plan

for similar database statements. As detail in the specification (pages 15-17), in determining, the

system and method for execution plan sharing, one must, first analyzing whether the SQL text of

the two similar statement is non-shareable; second determining whether the similar SQL

statements are sub-optimally shareable. If the statements are sub optimally shareable, then the

cursor-sharing parameter is set to FORCE. If the statements are sub optimally shareable but

cursor sharing is not set to FORCE, then a new cursor will by compiled for that SQL text. As a

result the shared execution plan implements reuse by automatically replacing every SQL text

literal with a bind variable.

(O).   Claims 58 and 62 recites "means for searching *memory* for similar SQL text". It is

unclear as to whether the applicant is referring to client memory or else. It is also unclear as to

why one having ordinary skill in the art would have to search memory for similar SQL text,

when the step of *determining if the SQL text is optimally shareable, sub-optimally shareable,*

or non-shareable is already use to perform the execution plan for similar database statements.

Applicant is advised to amend the claim to solve the 112-problem set forth in the office action.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

9.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10.   Claims 1, 4-5, 8-13, 16-17, 20-22, 27, 32, 33, 36, 37, 40-44, 48, 50-58, 62-63 and 67-68

as best understood by the examiner are rejected under 35 U.S.C. 103(a) as being unpatentable

over Chow et al., (hereinafter "Chow") US Patent no. 5,875,334.

As to claim 1, Chow discloses the claimed "receiving a database statement from a client " by

means of receive a query statement from a user (col.1, lines 63-67); "determining if the database

statement is optimally shareable, sub-optimally shareable, or non-shareable" (col.2, lines 25-29;

col.10, lines 54-67); and "searching memory for a similar database statement" by comparing the

SQL3 control statements (col.2, lines 25-29; col.10, lines 54-67), wherein the REPEAT

statements is similar to WHILE statements (col.12, lines 23-48). Chow does not explicitly

disclose the use of reusing a data structure compiled for said similar database statement to

execute said database statement when a system parameter is configured to control data structure

sharing. However, Chow discloses a V2 compiler, where the declaration and reference of a

cursor is processed in a way which involves the collaboration between the pre-processor and

SQL compiler is setup to control data structure sharing for subsequence operation (col.7, lines

50-67; col.32, lines 4-15; col.42, lines 13-52). Therefore, it would have been obvious to one

having ordinary skill in the art at the time the invention was made to modify Show's system

wherein the plan optimizer, provided therein (items 116 of fig.1) would incorporate the use of

reusing a data structure because that would provide Chow's system the enhanced capability of

compiling query statements and control statements, thereby eliminating redundant processing of

database statements.

As to claim 4, Chow discloses the claimed "wherein reusing a data structure compiled for said

similar database statement occurs when a command line parameter is configured to control data

structure sharing" (col.6, lines 25-36; col.23, lines 36-67).

As to claim 5, Chow discloses the claimed "wherein the command line parameter is a hint for

enabling a one-time system parameter override" (col.7, lines 50-67).

As to claim 8, Chow discloses the claimed "returning a result set to the client if said database

statement is a query" (col.39, lines 35-45).

As to claim 9, Chow discloses the claimed "wherein reusing a data structure includes executing the execution plan compiled from said similar database statement" (col.23, lines 35-65).

As to claim 10, Chow discloses the claimed "wherein said data structure a cursor" (col.42, lines 14-34).

As to claim 11, Chow discloses the claimed "wherein said database statement and said similar database statement are SQL statement" (col.23, lines 35-65).

As to claims 12-13, 16-17 and 20-21, the limitations of claims 12-13, 16-17 and 20-21 have been mentioned in the rejection of claims 1, 4-5 and 8-11 above. They are therefore, rejected under the same rationale.

As to claims 22, 27, 32-33, 36-37 and 40-43, the limitations of claims 22, 27, 32-33, 36-37 and 40-43 have been mentioned in the rejection of claims 1, 4 and 8-11 above. They are therefore, rejected under the same rationale.

As to claims 44, 48 and 50-57, the limitations of claims 44, 48 and 50-57 have been mentioned in the rejection of claims 1, 4 and 8-11 above. They are therefore, rejected under the same rationale. In addition, Chow discloses the claimed "a parser for hard parsing the database statement" (col.7, lines 50-67; col.32, lines 4-15; col.42, lines 13-52); "building an expression tree from the database" (col.); and "a syntactic analyzer" (col.7, line 66-col.8, line 7).

As to claims 58, 62 and 67-68, the limitations of claims 58, 62 and 67-68 have been mentioned

in the rejection of claims 1, 4 and 8-11 above. They are therefore, rejected under the same

rationale.

Allowable Subject Matter

11.   Claims 2-3, 6-7, 14-15, 18-19, 23-26, 28-31, 34-35, 38-39, 45-47, 49, 59-61 and 64-66

are objected to as being dependent upon a rejected base claim, but would be allowable if

rewritten in independent form including all of the limitations of the base claim and any

intervening claims.

12.   Claims 2-3, 6-7, 14-15, 18-19, 23-26, 28-31, 34-35, 38-39, 45-47, 49, 59-61 and 64-66

would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd

paragraph, set forth in this Office action and to include all of the limitations of the base claim
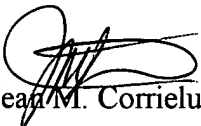
and any intervening claims.

Conclusion

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jean M. Corrielus whose telephone number is (571) 272-4032.

The examiner can normally be reached on Monday - Friday (12:00pm - 7:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jean M. Corrielus

Patent Examiner

November 19, 2004